# Chemical (Polymers/Materials)

## First Year

<table>
<thead>
<tr>
<th>Semester</th>
<th>Courses</th>
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<tbody>
<tr>
<td>Fall</td>
<td>GE A 4&lt;br&gt;WRIT 150 4&lt;br&gt;MATH 125 (GE F) 4&lt;br&gt;CHEM 105aL (GE E) 4&lt;br&gt;ENGR 102 2</td>
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<tr>
<td>Spring</td>
<td>CHE 120 (CHEM 105aL) 3&lt;br&gt;CHE 205 MATH 125 3&lt;br&gt;MATH 126 or MATH 129 4&lt;br&gt;CHEM 105bL CHEM 105aL 4&lt;br&gt;PHYS 151L or 126 or 226 4</td>
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## Second Year

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<th>Semester</th>
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<tr>
<td>Fall</td>
<td>CHEM 300L 3&lt;br&gt;MATH 226 or MATH 229 4&lt;br&gt;PHYS 152L 4&lt;br&gt;WRIT 340 3&lt;br&gt;CHEM 350 CHEM 105bL 3</td>
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<tr>
<td>Spring</td>
<td>GE B 4&lt;br&gt;CHEM 322aL CHEM 105aL 4&lt;br&gt;MATH 245 MATH 229 or MATH 229 4&lt;br&gt;CHEM 350 CHEM 105bL 3</td>
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## Third Year

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<tr>
<td>Fall</td>
<td>CHEM 430a PHYS 151L (MATH 226) 3&lt;br&gt;CHE 442 3&lt;br&gt;CHE 472 3&lt;br&gt;GE C 4&lt;br&gt;OPTIONAL ELECTIVE 1</td>
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<tr>
<td>Spring</td>
<td>GE B 4&lt;br&gt;CHEMISTRY ELECTIVE 4&lt;br&gt;CHEM 444aL CHEM 330 3&lt;br&gt;CHEM 444 3&lt;br&gt;CHEM 443 3&lt;br&gt;CHEM 476 or MASC 310 3&lt;br&gt;OPTIONAL ELECTIVE 1</td>
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## Fourth Year

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<th>Semester</th>
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<tr>
<td>Fall</td>
<td>GED 4&lt;br&gt;CHE 444bL CHEM 332bL CHEM 445 3&lt;br&gt;CHE 445 MATH 245 2&lt;br&gt;CHE 485 CHEM 440 3&lt;br&gt;POLYMER/MATERIALS SCI. ELECTIVE 3&lt;br&gt;CHE 405 or ISE 460 or BUAD 301 3</td>
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<tr>
<td>Spring</td>
<td>GE C 4&lt;br&gt;CHE 446 CHEM 245 2&lt;br&gt;CHE 460L CHEM 245 4&lt;br&gt;CHE 480 3&lt;br&gt;POLYMER/MATERIALS SCI. ELECTIVE 3&lt;br&gt;MASC 350 ISE 460 or MASC 113 or ASC 115 or GESM 440 3</td>
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## Mathematics (16 Units)

- MATH 125: Calculus I
- MATH 126 or MATH 129: Calculus II
- MATH 226 or MATH 229: Calculus III
- MATH 243: Mathematics of Phys. and Engr.

## Physics (8 Units)

- PHYS 151L: Mechanics and Thermodynamics
- PHYS 152L: Electricity and Magnetism

## Chemistry (24 Units)

- CHEM 105aL: General Chemistry
- CHEM 105bL: General Chemistry
- CHEM 300L: Analytical Chemistry
- CHEM 322aL: Organic Chemistry
- CHEM 430a: Physical Chemistry I
- CHEMISTRY ELECTIVE: (CHEM 322bL or 430b)

## General Education (32 Units)

- GE A: The Arts (1 Course)
- GE B: Humanistic Inquiry (2 Courses)
- GE C: Social Analysis (2 Courses)
- GE D: Life Sciences (1 Course)
- GE E: Physical Sciences (1 Course)
- GE F: Quantitative Reasoning (1 Course)
- GE G, H: Global Perspectives (2 Courses)*
- GESM: General Education Seminar (1 Course)*

## Writing (7 Units)

- WRIT 150: Writing and Critical Reasoning
- WRIT 340: Advanced Writing

## Engineering (57 Units)

- CHE 120: Intro. to Chemical Engineering
- CHE 205: Numerical Methods in Chemical Engineering
- CHE 330: Chemical Engr: Thermodynamics
- CHE 350: Intro. to Separation Processes
- CHE 405: Probability and Statistics for CHE or ISE 460: Engineering Economy or BUAD 301: Technical Entrepreneurship
- CHE 442: Chemical Reactor Analysis
- CHE 443: Viscous Flow
- CHE 444aBL: Chemical Engineering Lab
- CHE 445: Heat Transfer in CHE Processes
- CHE 446: Mass Transfer in CHE Processes
- CHE 460L: Chemical Process Dynamics
- CHE 472: Polymer Science & Engineering
- CHE 476: Chemical Engineering Materials or MASC 310: Materials Behavior and Processing
- CHE 480: Chem. Process and Plant Design
- CHE 485: Computer Aided Process Design
- ENGR 102: Engineering Freshman Academy

## General Education Seminar (1 Course)*

- MASC 350L: Nanotechnology: Design, Synthesis, and Processing

## Special Notes

- Courses with this symbol may be satisfied with AP, IB or A-Level exams. See page 17 for more information.

- GE: Engineering students are encouraged to satisfy GE G and GE H with a course that also satisfies a Core Literacy. GE H may be satisfied by exam. Additionally, your GESM course should be taken in categories A, B, C, or D only. See p. 16-17 for more information and consult your advisor for detailed assistance.

- OPTIONAL ELECTIVES: Consult with your academic advisor to explore optional elective courses. These courses are not required.

- POLYMER/MAT ELECTIVES: Select 3 units from BME 410, CHE 474L, 475, 477, 487, EE 438L, or MASC 440.